FIRE ECOLOGY CURRICULUM

USDA Forest Service
Southwestern Region

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Objectives:

- Build an educated and involved public
- Create support within the local community
- Reach future leaders with our messages
- Enhance our presence in the community
- Build a foundation of understanding about scientific principles related to fire's role in the ecosystem and Forest Service management
- Enhance classroom instruction while supporting state education standards

Benefits for Southwestern Region, Forest Service:

- Foster public involvement in forest activities and decision making
- Gain community support for forest programs and management techniques
- Educate future leaders about the Forest Service mission
- Enhance Forest Service presence in the community

Benefits for Schools:

- Supports academic standards
- Supports improving math, writing, reading and science skills
- Provides opportunities for exciting, hands-on lessons
- Demonstrates real-world applications of textbook lessons
- Augments regular classroom instruction
- Provides opportunities for students to learn about a range of potential careers

Key Messages:

(Each lesson is correlated not only to Arizona and New Mexico educational standards, but also to the following Key Messages.)

The National Forests of the USDA Forest Service Southwestern Region provide superior stewardship for current and future generations through the practice of ecosystem management.

A. The Forest Service applies the fundamental principles of science and ecology in order to better understand and manage forest ecosystems.

1. Fire has a natural role in the ecosystems.
2. Southwestern forests are primarily limited by water availability, not light.
3. Leaving nature alone has consequences, risks and trade-offs.
4. All components of the environment function as a dynamic, interdependent and interrelated system.
5. The study of the science of fire and its behavior is important.

B. People are part of nature, and their actions have effects on the land.

1. People need to be careful with fire.
2. Public lands are unique, valuable resources for which the public has a shared responsibility in their care.
3. Human development near or within forest boundaries has a long-lasting effect and brings risks and obligations.
4. The complexity of managing our public lands is compounded by the numbers of people living near or within our boundaries and the increasing demands from public land users.
5. There are limits to sustainable development.
6. The understanding of fire suppression techniques is important.

C. The Forest Service seeks to improve overall forest health and lessen the risk of high-intensity, destructive wildland fires by working to bring the forests closer to historic, ecological conditions.

1. Prior to European settlement, Southwestern ponderosa pine forests had far fewer trees than today and had frequent, low-intensity surface fires.
2. Infrequent, high-intensity fires – like those seen in mixed conifer forests of the Pacific Northwest – were not normal in ponderosa and pinyon-juniper forests before 1900.
3. Forest conditions now are not natural or healthy.
4. Because of unnaturally dense conditions, our forests are at risk for destructive wildland fires, insect infestations and diseases.
5. In many places on Southwestern forests, conditions now are such that wildland fires can have devastating, long-lasting effects.
6. The Forest Service cuts trees to accomplish specific objectives within the ecosystem such as reducing the risk of wildland fire, enhancing dwindling aspen stands, restoring grasslands, and improving forest health and wildlife habitat.
7. The Forest Service manages for biodiversity, not single species.
8. Doing nothing is not always the right answer. The Forest Service alone cannot know the right answer, but by collaborating with the public, we can come closer to it.
9. Prescribed fire is one tool the Forest Service uses to meet ecosystem goals.

How To Use This Manual

If this is your first time giving a program to school children, please read the section below on giving an effective program. Then, review the lesson plan for the grade to which you will be presenting. Take your time reviewing the lesson plan, but don't memorize it. Put it into your own words and use your own presentation style. (Nobody likes canned speeches, especially children!) As you practice, pretend you have the kids sitting in front of you. Ask your imaginary children questions and think of ways to get them involved in the program. Remember, these programs aren't lectures. They should be interactive and fun!

Giving an Effective Program

(The following tips were adapted from "Environmental Education," by Ron Russo.)

Getting started

- Before you begin, observe the group, their energy level, their behavior, and their relationship to the teacher. Ask the teacher what the children have already learned about fire. This information can help you adjust your program to your audience.
- Start by introducing yourself and your agency. (Example: "I'm Kelly, and I'm a volunteer with the United States Forest Service.")
- Smile. This is supposed to be fun!
- Make good eye contact. Ask them for their names, their grade level, the name of their school.
- Be outgoing; engage them in conversation, but maintain control of the group!

During the Program

- Ask questions.
- Involve the kids in the program; don't just lecture.
- Give your program a sense of discovery, of learning something amazing.
- Be enthusiastic.
- Use humor.
- Use props and visual aids; make portions of the program hands-on.
- Relate the information in the program to experiences in their own lives.
- Repeat important concepts, and make sure to recap important messages again at the end of the program.
- Slow down. Adults talk at 100-120 words per minute, which makes it hard for children to understand.
- Use drama. When attention starts to wander, change the tone or loudness of your voice. You can also pick on someone, ask a question, or change your facial expression.
- Kids and adults love stories; when possible, present your information as a story.
- Be flexible and ready to adjust your program to the group.
- Observe the children as you speak; if they don't seem to understand, try explaining it again with different words.
- Especially with younger children, do not give them too many ideas at once. Present ideas one at a time, and make sure they understand before going on to the next message.
- Use language appropriate to their grade level.

General Characteristics of Children By Grade Level
(Kindergarten Through Sixth Grade)

Preschool-Kindergarten

- Attention span is short; for a sit-down program, about 10 minutes.
- They are extremely experimental.
- They tend to roam and must be constantly monitored.
- They are unencumbered by adult attitudes or self-imposed restrictions.
- They are extremely tactile and sensory.
- Discipline problems minimal, but they need lots of attention.

Grades 1-3

- Attention span about 15 minutes for a sit-down program.
- They are alert, keen observers with good imaginations.
- They are beginning to absorb adult fears, concerns and restraints.
- In between major concepts, pauses to let the children digest new information are helpful.
- Discipline problems begin to emerge: competition for attention, shoving to get closer or in front of you.

Grades 4-6

- Attention span about 20 minutes for a sit-down program.
- They are very physical with lots of energy.
- Major discipline problems emerge: fighting, willful disobedience, wandering, talking.
- They are often reluctant to get involved.
- Rules and expectations must be made clear from the start.
- Avoid militaristic "ordering"; deal with them more as a parent or big brother/big sister.
- They can be testy, more demanding.
- They can assimilate major ecological concepts and discussions.

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Conservation Education Program
Presenter Evaluation

1. Name:_____
   Title:_____
   E-mail:_____
   Phone:(___)_____
2. Date of your school presentation_____
3. School at which you presented_____
4. Grade(s) to which you presented (k-12)_____
5. Teacher of the class to which you presented_____
6. Number of students to whom you presented_____
7. How long did your presentation last? (Example: 55 minutes)_____
8. Considering the reaction of the students to the presentation, was the program:
   ___Too long
   ___Just right
   ___Too short
9. How would you describe the reaction of the students to the program?
   ___Positive
   ___Neutral
   ___Negative

(Please note any specific feedback received)_____

_____

10. How would you describe the reaction of the teacher to the program?
    ___Positive
    ___Neutral
    ___Negative

(Please note any specific feedback received)_____

_____

11. Would you be willing to participate again in presenting this program or others to students?
    ___yes ___no

Why or why not? _____

_____

_____

12. How would you improve this program for future use?

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Conservation Education Program
Teacher Evaluation

1. Name:_____
   School:_____
   E-mail:_____
   Phone:(___)_____
2. Grade(s) Taught (k-12)_____
3. Did this program help you meet any of the required statewide curriculum standards?
   ___yes ___no
4. How close were this program and its associated materials to the appropriate reading and comprehension level for your students?
   ___Very close
   ___Somewhat close
   ___Not close
   If the program was "somewhat close" or "not close" to the appropriate reading and comprehension level, is it:
   ___Too hard
   ___Too easy
5. Would you use this program again in your classroom?
   ___yes ___no

Why or why not? _____

_____

_____

6. Please rate the program on a scale of 1 to 5:

	Poor		Average		Excellent
Interactivity	1	2	3	4	5
Visual materials	1	2	3	4	5
Written materials	1	2	3	4	5
Activities	1	2	3	4	5

7. Would you recommend the USDA Forest Service Southwestern Region Conservation Education Program to other teachers? ___yes ___no
   Why/why not (please note any changes you would make)? _____

_____

_____

8. Would you be willing to help us periodically with future research efforts to improve our educational offerings? ___yes ___no